MICROTEK

# User Guide

*This guide shows you how to operate the Take-it MV320 digital video camera (DV camera) and provides information on basic functions, video/audio clip recording, still image shooting, playback, and troubleshooting. Before using the Take-it MV320 , be sure to read the safety precautions to prevent injuries or damage to users or equipment.*

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November 2004

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**Federal Communications Commission Interference Statement**

This equipment (Take-it MV320) has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

***Notes:*** *A shielded USB interface cable with ferrite core installed on the DV camera's connector end must be used with this equipment.*

**Caution:** Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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# Table of Contents


Federal Communications Commission Interference Statement ..... 3
Safety Precautions ..... 6
Introduction ..... 8
DV Camera Package ..... 9
DV Camera Components ..... 10
- Front/Bottom View ..... 10
- Rear/Side View ..... 11

LCD Screen Display ..... 12
- Video Mode ..... 12
- Photo Mode ..... 13
- Audio Mode ..... 14
- Playback Mode ..... 15

## *Getting Started*

Attaching the Strap ..... 17
Loading the Battery ..... 17
Charging the Battery ..... 19
Inserting the SD Card ..... 19
Using the LCD Screen ..... 20
Turning the DV Camera On/Off ..... 21
Setting the Date and Time ..... 21
Selecting the Language ..... 22
Formatting the SD Card ..... 23

## *Before Shooting*

Using Modes ..... 24
Using the Menus ..... 25
Using the Multifunction Button ..... 26
Using the Shutter Button ..... 26
Holding the DV Camera ..... 26

## *Shooting*

Shooting Your First Video ..... 27
Shooting Your First Still Images ..... 28
Shooting with Digital Zoom ..... 29
Using the Macro Function ..... 29
Using the Flash ..... 30
Using the Self-Timer ..... 31
Continuous Shooting ..... 31
Recording a Voice Memo ..... 32

## *Customizing Shoot Settings*

Selecting Video Format ..... 33
Selecting Image Size ..... 34
Selecting Image Quality ..... 34
Selecting a Drive Mode ..... 35
Adjusting EV Compensation ..... 35
Adjusting White Balance ..... 36
Adjusting the Sharpness ..... 36
Turning On/Off Voice Memo ..... 37
Selecting Image Color Mode ..... 37

## *Audio*

Recording Audio ..... 38

## *Playback*


Playback Mode ..... 39
Playback Zoom ..... 41
Slide Show ..... 42
Rotating Images ..... 42
Specifying the Startup Image ..... 43
MP3 Playback ..... 44


## *Deleting and Printing*


Deleting Files ..... 45
  Deleting Current ..... 45
  Deleting Selected ..... 45
  Deleting All ..... 46
Printing Images ..... 46
  Printing Selected ..... 47
  Printing All ..... 47


## *DV Camera Setup*


Brightness ..... 48
Beep ..... 48
Date ..... 48
Time ..... 48
Date Stamp ..... 48
Video Out ..... 48
Format ..... 49
Reset ..... 49
Copy to SD ..... 49
Frequency ..... 49
Power Saving ..... 49
Language ..... 49
USB Switch ..... 49
File No Reset ..... 49


## *Downloading to Your Computer*


Getting the DV Camera Ready ..... 51
Connecting the DV Camera ..... 51
Copying Files ..... 52
Browsing Files ..... 53
Value-bundled Software ..... 53


## *Appendixes*


Appendix A—Viewing on a Television Set ..... 54
Appendix B – Web Cam ..... 55
Appendix C – Using the SD Card ..... 56
Appendix D – Maintenance ..... 57
Appendix E – Troubleshooting ..... 58
Appendix F – Warning and Error Messages ..... 66
Appendix G – Menus and Factory Defaults ..... 67
Appendix H– Specifications ..... 68

## *Safety Precautions*

Before you use the digital video camera (DV camera), be sure to read the following safety precautions, which detail the proper operation of the DV camera and its accessories to prevent injuries or damage to users or equipment.

This symbol indicates situations where improper use of the DV camera may result in harm to the DV camera operator.

This symbol indicates situations where improper use of the DV camera may result in damage to the DV camera.

Children should not be allowed to have access to the DV camera. They could injure themselves with inappropriate use of the DV camera or by becoming entangled in the carrying strap. If a child swallows a camera battery, get the child medical attention.

Subjecting the DV camera to water or any other liquid, or allowing condensation to form, may start a fire or give the user an electrical shock.

- If liquid gets inside the DV camera, turn the DV camera power off by removing the battery or unplugging the power cord (with dry hands).
- Allowing the DV camera to slowly adjust to temperature changes (as in transferring the unit from outdoors to indoors) will help to prevent condensation. Let any condensation evaporate before using the DV camera.

It is not advisable to leave the DV camera in a car on a hot day for any length of time. Exposing the DV camera to too much heat may warp the DV camera casing or damage the batteries. Battery damage may result in fire, burns or electrical shock.

Another source of possible burns is heat from the flash or DV camera itself.

- Touching the flash after it has been used extensively can cause burns.
- The DV camera body itself may burn your hands if the DV camera has been operated for a lengthy period of time.

⚠ Do not drop batteries or let them be banged around. This could damage the casings, causing the batteries to leak.

- If the internal parts or components of the battery come into contact with your eyes or your mouth, flush the affected site with water and get medical help.
- Do not short-circuit the battery terminals, and be sure to cover the terminals before you throw batteries away. If the terminals contact metal, they may overheat and explode, causing a fire.

⚠ Black or bright (red, green, blue, and white) dots may sometimes appear on the LCD screen. These are merely misfiring pixels, and have no effect on the recorded image.

⚠ If you aim the DV camera at the sun, or shoot the flash close to someone's eyes, you may injure your eyesight or that of someone else.

⚠ If you see smoke or smell a burning odor coming from your DV camera, turn the DV camera off. If you continue to operate the DV camera, it could cause a fire or give you an electrical shock.

⚠ Do not clean the DV camera with flammable liquid, as these may cause a fire.

⚠ Do not leave the DV camera in humid or dusty areas. Dust and humidity can cause the DV camera to short circuit, leading to a fire.

⚠ If the DV camera gets anywhere near a strong magnetic field, it may not work correctly, or the pictures taken may be ruined or adversely affected.

⚠ Use a soft, absorbent cloth to clean the surface of your DV camera.

## Introduction

The Microtek Take-it MV320 is a digital video camera (DV camera) that applies the ASF (MPEG 4) recording video format to capture motion pictures at a resolution of 640 x 480 or 320 x 240 pixels, offering superior image quality and super audio. Equipped with a large 2.0" color LCD screen, the DV camera allows you to focus clearly on the images you want and to review live images as shots are being taken.

Key features:

- 1/2″ 3.21-megapixel CMOS sensor
- 7 megapixels interpolated resolution
- 2.0" LTPS LCD screen with 270° rotation
- 4X Digital Zoom/4X Playback Zoom
- 16MB internal flash memory
- Secure Digital (SD) media external memory support
- Plug-and-play USB 1.1 and Video connection
- Macro function
- 5 flash modes with selectable Red-eye Reduction
- 10 sec. self-timer delay
- Functions as Digital still camera/Digital audio recorder
- Functions as Web Cam/Mass storage device
- Picture/video/audio player

## DV Camera Package

### Unpacking the DV Camera

Open your DV camera package and check that you have all of the components listed below.

If any component is missing, call Microtek Customer Service immediately.

DV Camera

Video cable

USB cable

Documentation: Includes Quick Start Guide and other inserts

Pouch

Microtek CD-ROM: Includes bundled software and DV camera driver

Strap

*Rechargeable Lithium ion battery (Nokia 8210 compatible)

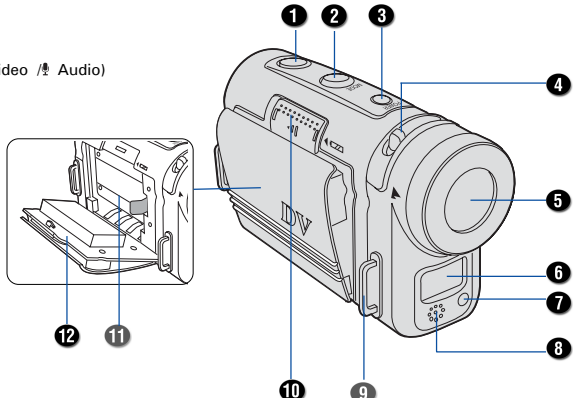
*AC adapter (5V, 2A; ⊖-⊂-⊕)

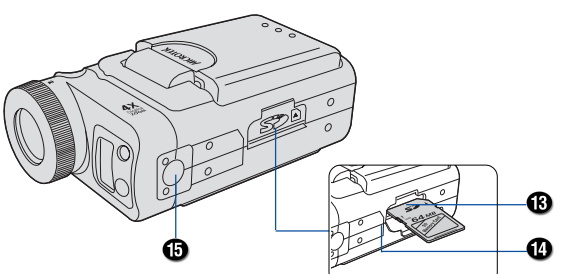
*Four AAA-sized alkaline batteries

* Power accessories you receive depend on the configuration of the DV camera purchased.

## Front /Bottom View

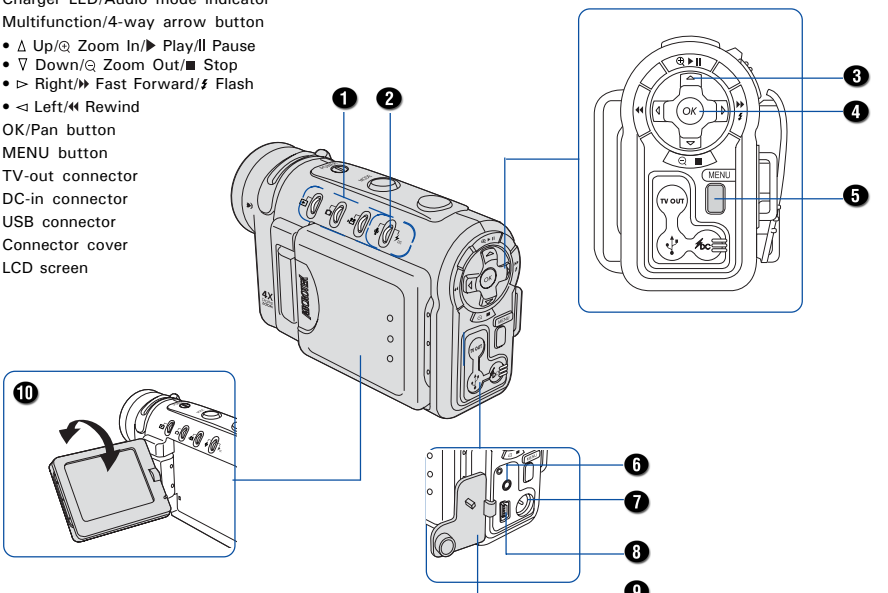
1. Shutter button
2. MODE button (▶ Playback/📷 Photo/🎥 Video /🎤 Audio)
3. POWER button
4. Macro focus lever (🌷/⛰)
5. Lens
6. Flash
7. Self-timer indicator
8. Microphone
9. Strap ring(s)
10. Battery door latch
11. Battery compartment
12. Battery door
13. Secure Digital (SD) compartment
14. SD card compartment cover
15. Tripod mount



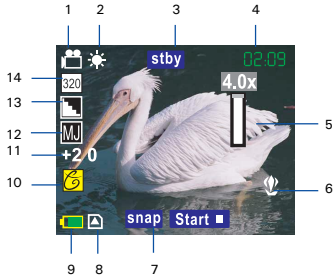



## *Rear/Side View*

1. Mode indicators/READY LEDs
2. Charger LED/Audio mode indicator
3. Multifunction/4-way arrow button
   - △ Up/🔍 Zoom In/▶ Play/II Pause
   - ▽ Down/🔍 Zoom Out/■ Stop
   - ▷ Right/⏭ Fast Forward/⚡ Flash
   - ◁ Left/⏮ Rewind
4. OK/Pan button
5. MENU button
6. TV-out connector
7. DC-in connector
8. USB connector
9. Connector cover
10. LCD screen

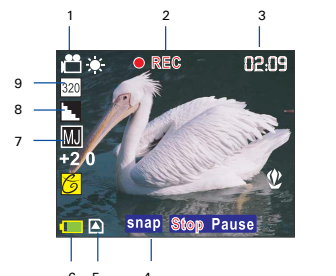


## Video Mode




Video recording standby

1. Video mode
2. White Balance (WB)
   (A Auto*/ Daylight/ Cloudy/ Tungsten/ Fluorescent)
3. Standby
4. Available recording time (Suggested)
5. Digital zoom level* (1X – 4X)
6. Macro mode
7. Shutter button (Press to begin video recording)
8. SD card indicator
9. Battery status indicator ( Full/ Half/ Low)
10. Color mode ( Normal*/ Black & White/ Classic)
11. Exposure Compensation (EV)
    (+2.0/+1.5/+1.0/+0.5/0.0*/-0.5/-1.0/-1.5/-2.0)
12. Video format ( MPEG 4/ Motion JPEG-AVI)
13. Quality (Compression) ( Best / Fine/ Normal)
14. Recording resolution ( 640x480 pixels/ 320x240 pixels)

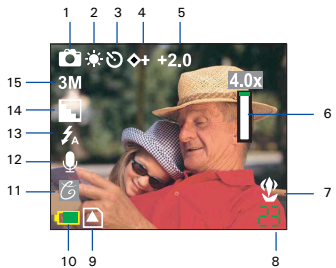



Video recording in progress

1. Video mode
2. Recording in progress
3. Elapsed recording time
4. Shutter button (Press to stop video recording)
5. SD card indicator
6. Battery status indicator ( Full/ Half/ Low)
7. Video format ( MPEG 4/ Motion JPEG-AVI)
8. Quality (Compression) ( Best / Fine/ Normal)
9. Recording resolution ( 640x480 pixels/ 320x240 pixels)

* No icon is shown when the setting is default.

## Photo Mode



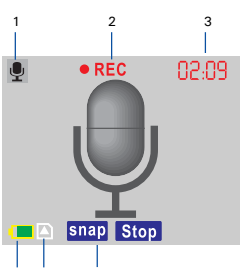

1. Photo mode
2. White Balance (WB)
   (A Auto*/ Daylight/ Cloudy/ Tungsten/ Fluorescent)
3. Drive mode
   ( Self-timer/ Single shot*)/ Continuous shot)
4. Sharpness ( Sharp/ Normal*/ Soft)
5. EV Compensation
   (+2.0/+1.5/+1.0/+0.5/0.0*/-0.5/-1.0/-1.5/-2.0)
6. Digital zoom level* (1X – 4X)
7. Macro mode
8. Number of pictures remaining
9. SD card indicator
10. Battery status indicator ( Full/ Half/ Low)
11. Color mode ( Normal*/ Black & White/ Classic)
12. Voice memo
13. Flash mode
    ( Auto/ Auto with Red-eye Reduction/ Forced flash/
    Forced flash with Red-eye Reduction/ Flash off)
14. Quality (Compression) ( Best / Fine/ Normal)
15. Image Size
    - 7M - 3072x2304 pixels (Interpolated)
    - 3M - 2048x1536 pixels
    - 2M - 1600x1200 pixels
    - 1M - 1280x960 pixels
    - VGA - 640x480 pixels

* No icon is shown when the setting is default.

## *Audio Mode*

Audio recording standby

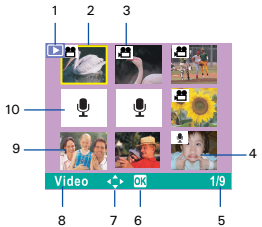
1. Audio mode
2. Standby
3. Available recording time (Suggested)
4. Shutter button (Press to begin audio recording)
5. SD card indicator
6. Battery status indicator (Full/Half/Low)




Audio recording in progress

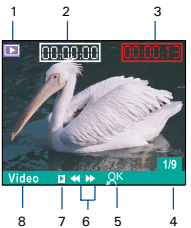
1. Audio mode
2. Recording in progress
3. Elapsed recording time
4. Shutter button (Press to stop audio recording)
5. SD card indicator
6. Battery status indicator (Full/Half/Low)

## Playback Mode ▶



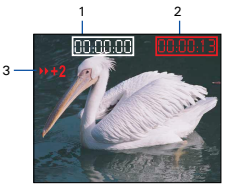

Nine-image display

1. Playback mode
2. The selected file is enclosed in a yellow border
3. Video file
4. Still image with voice memo
5. Selected file/Total number of files taken
6. Press the OK button to display the selected file in single-image display mode
7. Press the 4-way arrow button to select the file you want to play back
8. File type indicator
9. Still image file
10. Audio file




Video playback standby

1. Playback mode
2. Elapsed playback time
3. Total playback time
4. Selected file/Total number of files taken
5. Press the OK button to return to nine-image display mode
6. Press the ◁/▷ button to move forward/backward and select a different file
7. Press the △ button to start the video playback
8. File type indicator

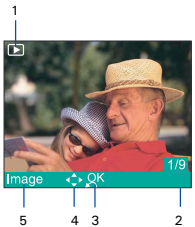



Video playback

1. Elapsed playback time
2. Total playback time
3. Press ◁/▷ (◀◀/▶▶) to advance or rewind the video playback with a speed setting

* Press ▽ (■) to stop the video playback and to return to standby

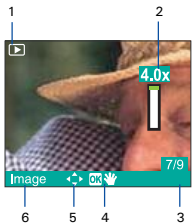
* Press △ (II) to pause the video playback




Still image
(Normal view)

1. Playback mode
2. Selected file/Total number of files taken
3. Press the OK button to return to nine-image display mode
4. Press the ◁/▷ button to move forward/backward and select a different file

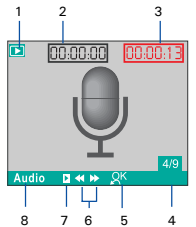
   Press the △/▽ button to display the still image in a magnification setting
5. File type indicator




Still image
(Magnified view)

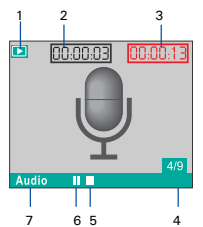
1. Playback mode
2. Image magnification level (1X – 4X)
3. Selected file/Total number of files taken
4. Press the OK button to enable the Pan feature
5. Press the ◁/▷ button to move forward/backward and select a different file

   Press the △/▽ button to magnify the still image
6. File type indicator




Audio playback standby

1. Playback mode
2. Elapsed playback time
3. Total playback time
4. Selected file/Total number of files taken
5. Press the OK button to return to nine-image display mode
6. Press the ◁/▷ button to move forward/backward and select a different file
7. Press the △ button to start the audio playback
8. File type indicator

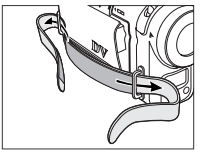



Audio playback

1. Playback mode
2. Elapsed playback time
3. Total playback time
4. Selected file/Total number of files taken
5. Press ▽ (■) to stop the audio playback and to return to standby
6. Press △ (II) to pause the audio playback
7. File type indicator

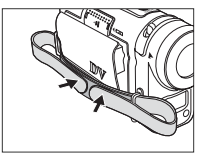
## Attaching the Strap

1. Thread the strap through the strap ring of the DV camera as shown.

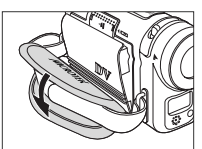


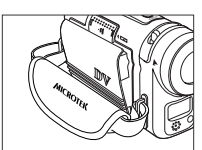
2. Fasten the two ends of the strip as shown.

   Ensure that the strap is adjusted correctly to fit your hand.



3. Fasten the grip pad around the strap as shown.

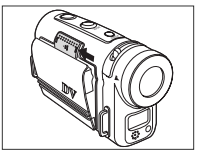


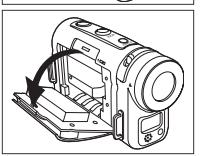


## 1. Loading the Battery

Power accessories you receive depends on the configuration of the DV camera purchased.

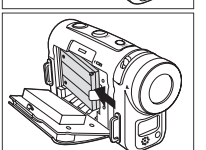
1. Ensure the DV camera is turned off; then push the battery door latch in the direction indicated by the arrow to open the battery door.

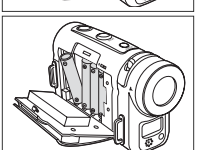




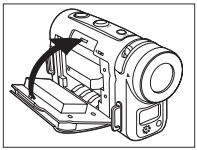
2. Insert the battery into the compartment.

   Depending on the configuration of the DV camera that you purchased, you can use either a rechargeable Lithium (3.7V) ion battery, or four AAA-sized alkaline batteries. Insert the batteries (Lithium ion or alkaline) as shown in the two lower illustrations on the right.

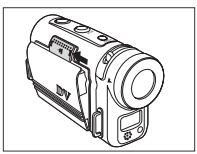




3. Hold the battery in place and close the battery door securely.



4. Push the battery door latch in the direction indicated by the arrow to close the battery door.

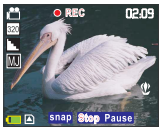


To remove the batteries, first make sure the DV camera is turned off. Then open the battery cover and take the batteries out.

## *Checking Battery Status*

When the DV camera is powered on, the battery status is always displayed at the bottom left corner of the LCD screen, helping you to estimate battery life during shooting and use of the DV camera. Check the battery status periodically to ensure that you have a sufficient battery charge.

The battery status icon on the LCD screen displays the state of the battery. When the indicator shows that the battery is nearly depleted, you should charge or replace the battery, depending on the type of battery used.




| | |
|---|---|
| Full | Battery is fully charged |
| Half | Battery approaches half-life |
| (blinking) Low | Battery low; replace or recharge soon |

External conditions or the type of battery used may affect the reliability of the battery status display.

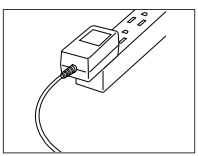
**NOTE:**

- When replacing an old battery, ensure that the DV camera is turned off before the battery is removed. Video/audio clips or still images can be lost or damaged if the power is removed while the DV camera is still operating.
- When using alkaline batteries, never mix old and new batteries together.
- Do not mix different brands or types of alkaline batteries.
- When the DV camera is not used for an extended period of time, remove the battery to eliminate the risk of leakage.

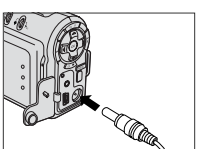
## Charging the Lithium ion Battery

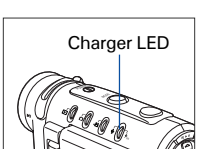
If your DV camera is supplied with an AC adapter (5V, 2A), when connected using the AC adapter, the DV camera can function as a charger, allowing you to charge the Lithium ion battery or power the DV camera.

1. Plug the AC adapter into the power source.
2. Ensure that the DV camera is turned off; then connect the DC plug of the AC adapter to the DV camera's DC-in connector.



When the DV camera is connected, the battery starts to charge, and the charger LED (Audio mode indicator) lights up red. After charging for several hours, the red light disappears, indicating that the battery is fully charged.






**NOTE:**

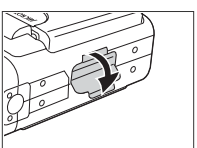
- Use only the AC adapter supplied with the DV camera to charge the Lithium ion battery (Nokia 8210 compatible only). Using any other adapter may damage the DV camera.
- To minimize the risk of fire and/or explosion, do not use the AC adapter to charge alkaline batteries.

## Inserting the SD Card*

A Secure Digital (SD) card can be used to increase the DV camera's memory capacity. When a card is installed, video/audio clips and still images are stored directly onto the SD card. If a card is not installed, video/audio clips and still images are stored in the DV camera's internal memory.

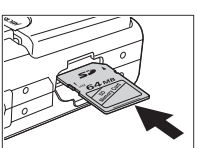
To install an SD card:

1. Ensure that the DV camera is turned off; then open the SD card compartment cover on the base of the DV camera.

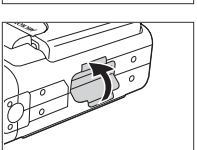


2 Insert and push the SD card into the compartment until you hear a "click".

Ensure that the orientation of the SD card matches the SD card marking in the SD compartment.



3. Close the SD card compartment cover securely.



*SD card is optional and is not included with your purchase.

To remove the SD card, make sure the DV camera is turned off, open the SD card compartment cover, push the card in, and release; the card pops out.

**NOTE:**

- Incorrect insertion of the SD card may cause a memory error, blocking you from storing any data in the SD card.
- You may lose or damage data if you remove the SD card while it is in operation.

For more information, see the Appendix "Using the SD card".

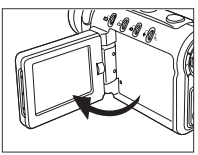
## *Using the LCD Screen*

The LCD screen is used to frame the subject while you take your shots. In addition, you will be able to view the stored video/audio clips and still images on the LCD screen as you record it.

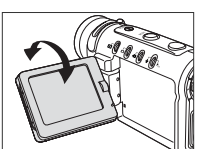
When the DV camera is powered on, the LCD screen is automatically activated, displaying the DV settings relevant to your current DV mode.

To use the LCD screen:

Swing to open LCD screen from the side of the DV camera.

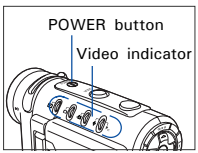


The LCD screen is designed to allow adjustment for viewing angles. You can adjust the LCD screen to tilt back to 180 degrees and to tilt forward to 90 degrees.



To protect the LCD screen from dust and dirt, close it when not in use.

## Turning the DV Camera On/Off




Press the **POWER** button to turn the DV camera on.

When the DV camera is turned on, the green Mode indicators start blinking and will stay on steady in the Video mode, and the LCD screen is activated as well.

Press the POWER button again to turn off both the DV camera and the LCD screen.

### *DV Camera Auto Power Off*

In order to prolong battery life, the DV camera or the LCD screen may be set to turn off automatically after a period of inactivity. If auto power saving is not required, you can disable the auto power saving function in the Setup menu mode (refer to page 49).

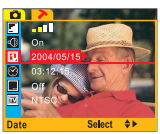
## Setting the Date and Time

Set the date and time on your DV camera before you use the DV camera for the first time. The DV camera can also add the time and date to your picture.

To set the date:

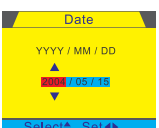
1. Press the MENU button.
2. Press ▷ to select the Setup (➚) menu option at the top.

   When selected, the settings are shown on the LCD screen and display the current state of the DV camera.




3. Use the △/▽ button to select "🗓" – Date, then press the ▷ button.

   A Date adjustment screen appears on the screen, allowing you to set the date.




4. Use the ◁/▷ button to toggle through the "YYYY", "MM", and "DD" formats.

   The selected option is highlighted with color.

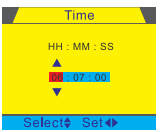
5. Use the △/▽ button to enter a new value for the selected option.
6. Press the ◁ button to confirm your changes and to return to the Setup menu screen.
7. Press the MENU button to exit the menu.

The time should also be set accurately on your DV camera.

To set the time:

1. In the Setup (➚) menu screen, use the △/▽ button to select "⏲" – Time, then press the ▷ button.

   A Time adjustment screen appears on the screen, allowing you to set the time.




2. Use the ◁/▷ button to toggle through the "HH", "MM", and "SS" formats.

   The selected option is highlighted with color.

3. Use the △/▽ button to enter a new value for the selected option.
4. Press the ◁ button to confirm your changes and to return to the Setup menu screen.
5. Press the MENU button to exit the menu.

**NOTE**: The date and time setting may be shown incorrectly if the DV camera has not been in use for a long time. Please check the date and time setting and adjust accordingly.

## *Selecting the Language*

The DV camera allows you to select the on-screen display language.

To change the language setting:

1. Press the MENU button.
2. Press the ▷ button to select the Setup (➚) menu option at the top.

3. Use the △/▽ button to select "ENG/繁體中文" – Language.
4. Press the ▷ button to display the available language options.
5. Use the △/▽ button to select the language you require.
6. Press the ◁ button to confirm your choice.

7. Press the MENU button to exit the menu.

## *Formatting the SD Card**

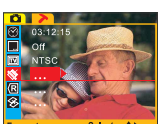
Before you insert an SD card into your DV camera for the first time, you will need to format the SD card with the DV camera. In most cases, the newly purchased SD card can be directly used for storing images. To prevent possible malfunction, it is best to format the SD card before you shoot.

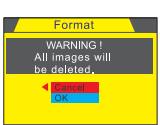
In addition, you can use the format function to erase all previous files stored in the DV camera's internal memory or in the SD card.

To format the SD card:

1. Press the MENU button.
2. Press ▷ to select the Setup (➤) menu option at the top.
3. Use the △/▽ button to select "✂ – Format, then press the ▷ button.

   A Format screen displays on the LCD screen, allowing you to format the installed SD card or to cancel.




4. Use the △/▽ button to select "OK", then press the ◁ button.

   The SD card will begin formatting. When formatting is completed, the LCD screen returns to the Setup menu screen.

5. Press the MENU button to exit the menu.

**NOTE:**

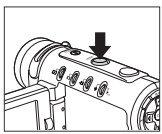
- The format function removes all files from the DV camera's internal memory or SD card permanently. Before you perform the format operation, ensure that you have saved all desired images and video/audio clips from the DV camera.
- A "MEMORY FULL" message appears on the LCD screen if the internal memory or the SD card is full. To resolve --
  - Connect the DV camera to your computer, then transfer the stored files from the DV camera's internal memory or the SD card to the computer.
  - Remove all the files in the SD card or the DV camera's internal memory, or use a new SD card. Individual images can also be deleted to free up memory.
- Improper use of the SD card may damage its stored files. For better storage, transfer the files from your SD card to your computer, and back up the files to a hard disk or CD-ROM.

* SD card is optional and is not included with your purchase.

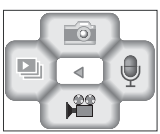
## Using Modes

The **MODE** button allows you to switch among Playback, Photo, Video, and Audio modes.

Press the MODE button, and the LCD screen shows the mode screen with the four mode options.



Select the desired mode by using the 4-way arrow button. When selected, the selected mode is activated on the LCD screen, and the mode indicator lights up as well at the same time.



- Video Mode

  Press ▽ to enter Video mode; this allows you to record movie clips of unlimited length (maximum length dependent on the size of available memory).

- Photo Mode

  Press △ to enter Photo mode; this allows you to capture still images in JPEG format with automatic exposure, or provides you with a full selection of manual controls over all DV camera settings.

- Audio Mode

  Press ▷ to enter Audio mode; this allows you to record audio clips of unlimited length (maximum length dependent on the size of available memory).

- Playback Mode

  Press ◁ to enter Playback mode; this allows you to playback the stored video/audio clips or still images. You can browse and delete these stored recordings, or imprint the images with a DPOF mark for printing.

## *Using the Menus*

Different menus are available for Video, Photo, Playback, and Setup modes. You can customize the DV settings for your own use, as well as for shooting-related functions. Press the **MENU** button to display a menu for the selected mode. (The Setup menu appears in all modes, except Audio mode.)

To access the menus:

1. Press the MENU button.

   The selected mode menu is displayed on the LCD screen.

   a) Use the ◁/▷ button to enter the function menu.

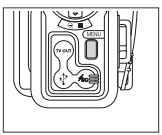
   b) Use the △/▽ button to navigate through function items.

   c) Use the ▷ button to enter the function options menu.

   d) Use the △/▽ button to toggle through options.

      The selected function/option is highlighted with color.

   e) Use the ◁ button to confirm your selection.



2. Press the MENU button to exit the menu.

| Functions | Video | Photo | Playback | Page |
|---|---|---|---|---|
| Video Format | o | — | — | 33 |
| Size | o | o | — | 34 |
| Quality | o | o | — | 34 |
| Drive Mode | — | o | — | 35 |
| EV Compensation | o | o | — | 35 |
| White Balance | o | o | — | 36 |
| Sharpness | — | o | — | 36 |
| Voice Memo | — | o | — | 37 |
| Color Mode | o | o | — | 37 |
| Erase | — | — | o | 45 |
| Slide Show | — | — | o | 42 |
| Rotate | — | — | o | 42 |
| Print | — | — | o | 46 |
| Startup Image | — | — | o | 43 |

| Functions | Setup | Page |
|---|---|---|
| Brightness | o | 48 |
| Beep | o | 48 |
| Date | o | 48 |
| Time | o | 48 |
| Date Stamp | o | 48 |
| Video Out | o | 48 |
| Format | o | 49 |
| Reset | o | 49 |
| Copy to SD | o | 49 |
| Frequency | o | 49 |
| Power Saving | o | 49 |
| Language | o | 49 |
| USB Switch | o | 49 |
| File No Reset | o | 49 |

(o: Available, —: Unavailable)

## Using the Multifunction Button

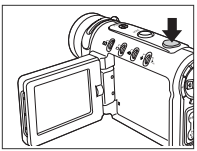
The **Multifunction** button provides Up, Down, Left, and Right arrow selections for navigating the menu screens. In addition, the button can perform different functions, depending on the selected DV mode, as shown by the table below.

| Button | Playback | Photo | Movie |
|---|---|---|---|
| △ | Zoom In/▶ Play/❚❚ Pause/Pan | Zoom In | Zoom In |
| ▷ | Next/▶▶ Fast Forward/Pan | Flash | — |
| ▽ | Zoom Out/■ Stop/Pan | Zoom Out | Zoom Out |
| ◁ | Previous/◀◀ Rewind/Pan | — | — |

The OK button, located in the center of the Multifunction button, allows you to confirm your choice and switch between nine-image display and single-image display in Playback mode.

## Using the Shutter Button

Press the **Shutter** button all the way down to take a shot or to record.

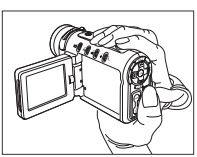


**NOTE:**

By default, a beep sounds when the Shutter button is pressed to indicate that a recording has been made. If the beep feature is turned off, however (in the Setup menu), a "busy" dialog box is the only indicator that something has been recorded.

## Holding the DV Camera

Hold the DV camera with your right hand through the strap. Adjust the strap so that you can operate all the buttons while holding the DV camera steady.



**NOTE:**

- Avoid obstructing the DV camera or flash when shooting photos or audio recordings.
- Hold the DV camera securely with your hand to prevent shaking and dropping it. Use a tripod for best results, especially when using the self-timer or in poorly lit places when the flash is turned off.
- Do not touch the lens or the flash.

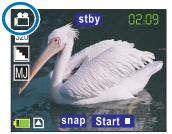
## Shooting Your First Video

Video mode allows you to record digital video clips in ASF (MPEG 4) and AVI format with resolutions of 640x480 or 320x240 pixels. The video clips can be stored in the DV camera's internal memory or in the SD expansion card, the length of which is determined only by the size of your available memory.

To record video clips:

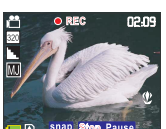
1. Press the POWER button to turn on the DV camera.

   The DV camera should start up in Video mode. Check for the Video mode icon (▸📹) in the top left corner of the screen.




2. Compose your shot using the LCD screen.
3. Press the Shutter button and release to start recording.

   Video recording begins, with the elapsed recording time shown on the LCD screen.




   For best results, hold the DV camera steady to pan when recording video clips.

4. Press the Shutter button a second time to stop recording.

   The video is recorded and is automatically saved in the memory. The DV camera is then ready to record another video. You will be able to view your video in Playback mode.

**NOTE:**

- If the DV camera is not in Video mode, press the MODE button to show the mode screen, then select Video mode (▸📹).
- You can change the various settings that influence the quality and appearance of the video clips you record. The following table lists the available functions that can be manually adjusted in the Video menu.
- The flash is inactive in Video mode.

| Function | Description | Page |
|---|---|---|
| | Video Format | 33 |
| | Size | 34 |
| | Quality | 34 |
| | EV Compensation | 35 |
| WB | White Balance | 36 |
| | Color Mode | 37 |

## *Shooting Your First Still Image*

In addition to making vide clips, the Take-it MV320 can be used to take digital still images in JPEG format at resolutions of up to megapixels (interpolated).

1. Press the POWER button to turn on the DV camera.

   The DV camera starts up in Video mode when you turn the DV camera on. You will need to switch to Photo mode to take still images

2. Press the MODE button

   The LCD screen shows the mode screen with the four mode options.

3. Press the △ button to enter Photo mode (📷).

   When the DV camera changes to Photo mode, there will be an icon appears in the top left corner of the LCD screen.

4. Compose your shot using the LCD screen.

5. Press the Shutter button to take a shot.

   When you press the Shutter button, you will hear a sound to indicate that the still image has been taken (unless the sound is disabled), and the captured image remains on the screen for two seconds.

   The DV camera is ready to take another still image when the “Busy” message vanishes from the LCD screen.

**NOTE:**

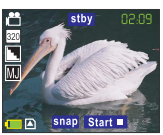
- The effective shooting distance from the lens to your subject is 3.28 ft. (1m) to infinity in normal mode, and 0.5 to 0.8 ft. (15 to 24 cm) in Macro mode.
- The use of a tripod is recommended to prevent blurring when taking still images.
- You can change the various settings that will influence the quality and appearance of the still images you take. The following table lists the available functions that can be manually adjusted in the Photo menu.

| Function | Description | Page |
|---|---|---|
| | Size | 34 |
| | Quality | 34 |
| M | Drive Mode | 35 |
| | EV Compensation | 35 |
| WB | White Balance | 36 |
| | Sharpness | 36 |
| | Voice Memo | 37 |
| | Color Mode | 37 |

## Shooting with Digital Zoom

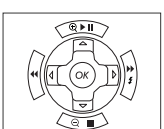
The DV camera is equipped with a digital zoom function. You can zoom in on distant images by pressing the ∆ (🔍) button on the rear of the DV camera without changing the shooting distance; the maximum zoom scale is 4X. Use the ∇ (🔍) button to zoom back out.

1. In shooting mode, compose your shot using the LCD screen.

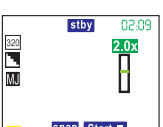



2. Press the ∆/∇ (🔍/🔍) button until the desired zoom level is reached.

   A bar appears indicating the zoom scale of the DV camera.



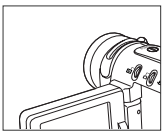

3. Release the ∆/∇ (🔍/🔍) button when you have reached the desired zoom level.
4. Press the Shutter button and release to shoot.




**NOTE:** The zoom level is disabled when you change modes.

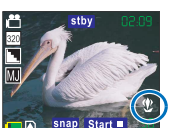
## Using the Macro Function

You may want to shoot images or video of subjects from a short distance. Use the Macro function in this case. The effective Macro shooting distance is 0.5 to 0.8 ft. (15 to 25 cm) from the lens to the subject.



To take a Macro shooting:

1. In shooting mode, move the Macro focus lever located on the front of the DV camera to Macro mode (🌷).




   When the Macro focus lever is in the Macro position, an icon (🌷) appears on the LCD screen.

2. Compose your shot using the LCD screen.
3. Press the Shutter button to take a shot.

Before

After

To bring the DV camera back to normal shooting mode, move the Macro focus lever back to Normal position (🏔).

## *Using the Flash*

The flash serves as a built-in supplemental light source for taking pictures in environments with insufficient lighting. The effective flash range is 1.5m to 2m.

The flash with red-eye reduction allows you to reduce the phenomenon of "red eyes," which occurs when a subject is photographed directly while using a flash.

By pressing the Flash (⚡) button you can toggle through the following flash modes:

⚡ᴬ **Auto** (Auto flash) — The flash fires when ambient lighting conditions require its use.

⚡ **Auto with red-eye reduction** — The flash will fire when ambient lighting conditions require its use and will reduce the red-eye effect.

⚡ **Forced flash** — The flash fires every time you take a picture, regardless of ambient lighting conditions.

⚡ **Forced flash with red-eye reduction** — The flash fires every time you take a picture regardless of lighting conditions and will reduce the red-eye effect.

**Flash off** — The flash will not fire.

To take pictures using a desired flash mode:

1. In Photo mode (📷), frame the subject using the LCD screen.
2. Press the Flash (⚡) button until the desired flash mode appears on the LCD screen.

   The factory default flash is Flash off.
3. Press the Shutter button to shoot.

**Auto with red-eye reduction**

Before

After

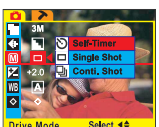
**NOTE:** The flash is designed to fire twice in order to detect correct shooting distance of the subject. When you press the Shutter button with the flash enabled, you will see the flash fire twice and hear a sound to indicate that a still image has been taken (unless the sound is disabled). The DV camera is then ready to take another still image.

## *Using the Self-Timer*

A 10-second self-timer mode in the DV camera enables you to be part of any picture. With the self-timer on, a picture is taken automatically after 10 seconds.

To take pictures with the Self-timer:

1. In Photo mode (), press the MENU button.
2. Use the 4-way arrow button to select "M" – Drive Mode, then select "" – Self-timer.




3. Press the ◁ button to confirm your choice.
4. Press the MENU button to exit the menu.

   The Self-timer icon appears on the LCD screen.

5. Compose your shot using the LCD screen, and press the Shutter button.

   The Self-timer countdown begins. You have 10 seconds to get into position before a shot is taken. A beep sounds for two seconds before the DV camera takes a shot.

**NOTE**: The self-timer mode automatically switches off after a shot is taken.

## *Continuous Shooting*

Continuous shooting enables you to take three pictures in rapid succession with a single press of the Shutter button. This is useful for shooting moving objects.

To use continuous shooting:

1. In Photo mode (), press the MENU button.
2. Use the 4-way arrow button to select "M" – Drive Mode, then select ""– Continuous shot for 3-image continuous shooting.

3. Press the ◁ button to confirm your choice.
4. Press the MENU button to exit the menu.

   The continuous shooting icon appears on the LCD screen.

5. Compose your shot using the LCD screen, and press the Shutter button.

   Three images are taken in rapid succession after the Shutter button is pressed.

**NOTE:**

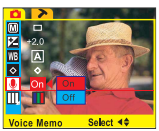
- Continuous shooting mode automatically switches off after the 3-image shot is taken.
- If the SD card is full, the DV camera will stop taking pictures.

## *Recording a Voice Memo*

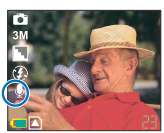
When you have taken your picture, your DV camera can record a maximum 10-second audio clip that can be saved with the picture.

To record an audio clip to go with your picture:

1. In Photo mode (), press the MENU button.
2. Use the 4-way arrow button to select "" – Voice Memo, then select "On".
3. Press the ◁ button to confirm your choice.
4. Press the MENU button to exit the menu.




When Voice Memo is enabled, a Voice Memo icon () appears on the LCD screen, allowing you to record a short audio clip after a picture is taken.




5. Take a picture in the usual way.

After the picture is taken, audio clip recording begins, with the elapsed recording time shown on the LCD screen.

Recording stops and returns to Photo mode after you press the Shutter button again or when the maximum 10-second recording length is reached.

**NOTE:**

- In Continuous shooting, the Voice Memo function is inactive even though the function is enabled.
- To get better voice quality during recording, locate the position of the DV camera's microphone and speak towards it. In addition, the distance between the speaker and the microphone should be as close as possible. Do not touch or cover the microphone during recording.

# Customizing Shoot Settings

This section lists the shooting-related settings available to the Take-it MV320. You can modify selected functions by changing the parameter for a given option. To access these functions, use the MENU button on the rear on the DV camera.

The following table lists the available functions for the Video and Photo mode. For detailed information, see following pages.

| Function | Video | Photo | Page |
|---|---|---|---|
| Video Format | o | — | 33 |
| Size | o | o | 34 |
| Quality | o | o | 34 |
| Drive Mode | — | o | 35 |
| EV Compensation | o | o | 35 |
| White Balance | o | o | 36 |
| Sharpness | — | o | 36 |
| Voice Memo | — | o | 37 |
| Color Mode | o | o | 37 |

(o: Available, —: Unavailable)

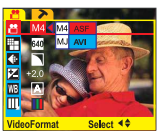
## Selecting Video Format

The Video Format function allows you to specify the type of video clip being recorded. The supported video formats are ASF (MPEG 4) and AVI.

| Option | Description |
|---|---|
| (MPEG 4) | Records video clips in ASF format |
| (Motion JPEG-AVI) | Records video clips in AVI format |

To access the Video Format setting:

1. In Video mode, press the MENU button.
2. Use the 4-way arrow button to select "" – Video Format, then select the video format option you require.
3. Press the ◁ button, then the MENU button to exit the menu.




The icon of the selected video format appears on the LCD screen. You are now ready to shoot.

## Selecting Image Size

The Size function enables you to capture images with different image size settings. Choosing a bigger image size will require more memory for storing recorded still images or video clips. The DV camera can capture still images as large as 7 megapixels (3072x2304 pixels) or as small as VGA (640x480 pixels). Two size options are also available for video clips.

| Option | Description |
|---|---|
| 7M | 3072x2304 pixels (interpolated) |
| 3M | 2048x1536 pixels |
| 2M | 1600x1200 pixels |
| 1M | 1280x960 pixels |
| VGA/640 | 640x480 pixels |
| QVGA/320 | 320x240 pixels (for Video menu only) |

To access and adjust the image size option:

1. In either Video mode or Photo mode, press the MENU button.
2. Use the 4-way arrow button to select "" – Size, then select the image size option you require.
3. Press the ◁ button, then the MENU button to exit the menu.

   The selected image size icon appears on the LCD screen. You are now ready to shoot.

## Selecting Image Quality

The Quality function enables you to capture images with three compression ratio levels. The less the compression ratio, the better the image quality.

| Option | Description |
|---|---|
| (Best) | Provides a more detailed image for a better-quality image shots, but takes up more memory space. |
| (Fine) | The normal setting used for general shooting. |
| (Normal) | Allows more images to be taken, and takes up less memory space. |

To access the image quality option:

1. In either Video mode or Photo mode, press the MENU button.
2. Use the 4-way arrow button to select "" – Quality, then select the image quality level you require.
3. Press the ◁ button, then the MENU button to exit the menu.

   The selected image quality icon appears on the LCD screen. You are now ready to shoot.

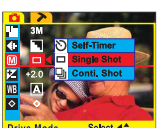
## Selecting a Drive Mode

The Drive Mode function enables you to determine how you want to take your still images. Use the Drive Mode setting to switch between a standard Shutter operation, a delayed shutter, and a continuous-shot shutter. This function is available only in Photo mode.

| Option | Description |
|---|---|
| (Self-timer) | Enables you to automatically capture a still image after a delay of 10 seconds. |
| (Single shot) | Enables you to take a single normal picture. |
| (Continuous shot) | Enables you to capture 3 still images in rapid succession with a single press of the Shutter button. |

To access the Drive Mode setting:

1. In Photo mode, press the MENU button.
2. Use the 4-way arrow button to select "Ⓜ" – Drive Mode, then select the Drive Mode option you require.
3. Press the ◁ button, then the MENU button to exit the menu.



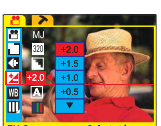

The selected Drive Mode icon appears on the LCD screen. You are now ready to shoot.

## Adjusting EV Compensation

EV Compensation is required when there is a large discrepancy in brightness between the subject and background, and adjusting the EV setting can lessen this discrepancy. For example, when a subject is backlit, such as in a snow or beach surrounding, a positive EV setting can brighten the setting. When a subject is in shadow, such as in the shadow of a tree, a negative EV setting will darken the subject and create an even amount of the light to surround the subject.

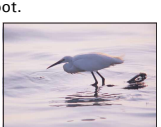
EV adjustments are made from -2.0 to + 2.0 in 0.5-step increments. To adjust the EV setting:

1. In either Video mode or Photo mode, press the MENU button.
2. Use the 4-way arrow button to select "🖼" – EV Compensation, then select the EV value you require.
3. Press the ◁ button, then the MENU button to exit the menu.




A selected EV setting icon appears on the LCD screen. You are now ready to shoot.

Before



After

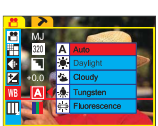
## Adjusting White Balance

The White Balance function enables you to adjust the color balance in shots taken under different lighting conditions. With white balance activated, the DV camera also can eliminate color variations caused by lighting conditions. In most cases, if you choose "Auto", the DV camera automatically adjusts the White Balance to the environment.

| Option | Description |
|---|---|
| (Auto) | Adjusts white balance automatically. |
| (Daylight) | Use outdoors for sunny days. |
| (Cloudy) | Use outdoors for cloudy days. |
| (Tungsten) | Use indoors to correct tungsten/light bulb illumination. |
| (Fluorescent) | Use indoors to correct fluorescent bulb illumination. |

To access the White Balance setting:

1. In either Video mode or Photo mode, press the MENU button.
2. Use the 4-way arrow button to select "WB" – White Balance, then select the White Balance option you require.
3. Press the ◁ button, then the MENU button to exit the menu.




The selected White Balance icon appears on the LCD screen. You are now ready to shoot.

## Adjusting the Sharpness

The Sharpness function allows you to sharpen (highlight) or soften (blend) the edges of pixels within the image. Higher sharpness makes these edges visible, and a lower sharpness makes these edges softer. This function is available only in Photo mode.

| Option | Description |
|---|---|
| (Soft) | Softens the edges of pixels in the image; good for portrait shots. |
| (Normal) | No special effects; no adjustment. |
| (Sharp) | Sharpens the edges of pixels in the image, increasing image clarity. |

To access the Sharpness setting:

1. In Photo mode, press the MENU button.
2. Use the 4-way arrow button to "◇" – Sharpness, then select the Sharpness option you require.
3. Press the ◁ button, then the MENU button to exit the menu.

The selected Sharpness icon appears on the LCD screen. You are now ready to shoot.

Low Normal High

## Turning Voice Memo On/Off

The Voice Memo function allows you to add a maximum 10-second audio clip immediately to the captured image you just made. The Voice Memo file will have the same basic file name as the captured image with a different file extension — .WAV. This function is available only in Photo mode.

To access the Voice Memo setting:

1. In Photo mode, press the MENU button.
2. Use the 4-way arrow button to select "🎙" – Voice Memo, then select either "On" or "Off".
3. Press the ◁ button, then the MENU button to exit the menu.

   When Voice Memo is turned on, the Voice Memo icon appears on the LCD screen. You are now ready to shoot.

## Selecting Image Color Mode

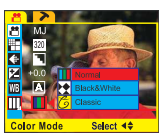
Use the Color Mode function to change the color effects of your images. Three color modes are provided for generating various color effects.

| Option | Description |
|---|---|
| (Normal) | Produces standard color images. |
| (Black & White) | Produces black-and-white images. |
| (Classic) | Produces images tinted to look like old-fashioned sepia photographs. |

To access the Color Mode setting:

1. In either Video mode or Photo mode, press the MENU button.
2. Use the 4-way arrow button to select "▥" – Color Mode, then select the Color Mode option you require.
3. Press the ◁ button, then the MENU button to exit the menu.

   The selected Color Mode icon appears on the LCD screen. You are now ready to shoot.



Normal

Black & White

Classic

## Recording Audio

Audio mode allows you to record audio clips in WAV format. You can record audio clips of any length; recording time is determined only by the size of your available memory.

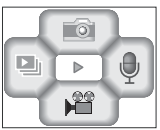
To record audio clips:

1. Press the POWER button to turn on the DV camera.

   The DV camera starts up in Video mode when you turn the DV camera on. You will need to switch to Audio mode to record audio clips.

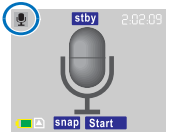
2.. Press the MODE button.

   The LCD screen shows the mode screen with the four mode options.



3. Press the ▷ button to enter Audio mode ( ).

   When the DV camera changes to Audio mode, there will be an icon appears in the top left corner of the LCD screen, indicating that you are in audio standby recording state.




4. Press the Shutter button to record audio.

   Audio recording begins, with the elapsed recording time shown on the LCD screen.

   For getting better voice quality, locate the position of the DV camera's microphone and speak towards it when recording.

   The distance between the speaker and the microphone should be as close as possible. Do not touch or cover the microphone during recording.

4. Press the Shutter button a second time to stop recording.

   The audio is recorded and is automatically saved in memory. The DV camera is then ready to record another audio. You will be able to playback your audio in Playback mode as you record it.

## Playback Mode

Playback Mode is used to play the stored images and video/audio clips made with the DV camera in either nine-image display or single-image display.

Image and video clips will be displayed on the LCD screen. Audio clips will be played using the internal speaker.

In addition, the DV camera can be used to browse or erase all recordings, magnify still images, display a slide show, or add a print mark (DPOF) to still images for print shop service.

The following table lists the available functions that can be manually adjusted in the Playback menu.

| Function | Description | Page |
|---|---|---|
| | Erase | 45 |
| | Slide Show | 42 |
| | Rotate | 42 |
| | Print | 46 |
| | Startup Image | 43 |

To access Playback mode:

1. Press the POWER button to turn on the DV camera.

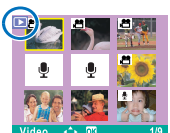
   The DV camera starts up in Video mode when you turn the DV camera on. You will need to switch to Playback mode to play back all the files stored in the memory.

2. Press the MODE button.

   The LCD screen shows the mode screen with the four mode options.

3. Press the ◁ button to enter Playback mode (▶).

   When the DV camera changes to Playback mode, there will be an icon appears in the top left corner of the LCD screen, indicating that you are in Playback mode.

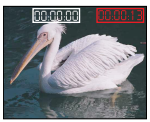


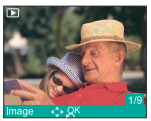

   In Playback mode, the LCD screen displays all the stored files in a composite display of nine images at the same time.

   Videos and still images are displayed as thumbnails of the image. Audio files are displayed as a microphone icon.

4. Use the 4-way arrow button to select a file you want to play, then press the OK button to confirm your selection.

Video and still images will be displayed on the LCD screen. Audio files can be heard through the internal speaker of the DV camera.

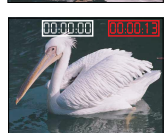


In this display mode, you can use the ◁/▷ (⏮/⏭) button to toggle forwards/backwards through all the recorded files.

When playing video or audio clips, use the 4-way arrow button on the rear of the DV camera to play/pause, fast forward, reverse, and stop the playback.

- Press △ (⏯) to pause video/ audio playback.
- Press △ (▶) to continue video/ audio playback.
- Press ◁/▷ (⏮/⏭) to advance or reverse the playback with a speed setting. The speed adjustment can be adjusted from -4 to +4 in 2-step increments.
- Press ▽ (■) to stop video/audio playback and to return to the beginning.




To return to the main screen (a composite display of nine images), press the OK button in the center of the 4-way arrow button.

## *Playback Zoom*

In playback mode, the magnification feature allows you to magnify a captured still image at up to four times the original viewing size. This feature works only on captured still images.

- Press the ▵ (⊕) button repeatedly to magnify the image from the original viewing size to four times the size in 0.1-step increments.
- Press the ▿ (⊖) button repeatedly to reduce the magnified image to the original viewing size.

Normal image Magnified image

To magnify still images:

1. Select a still image you want to magnify in Playback mode.
2. Press the ▵ (⊕) button to magnify and the ▿ (⊖) button to reduce viewing size.

With a magnified image, you can use the Pan feature to scroll through the partially magnified image and bring it into view.

To pan a magnified image:

1. Ensure that you are currently viewing a magnified image, then press the OK button.

   A Pan icon (✋) appears on the bottom of the LCD screen.

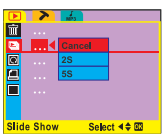
2. Press the OK button to enable the Pan feature.
2. Use the 4-way arrow button to scroll through parts of the magnified image into view.
3. Press the OK button again to disable the Pan feature.

## Slide Show

The **Slide Show** function enables you to view your all stored files by playing them back in sequence (if you have stored more than one file). You can set the delay to either two or five seconds (2s or 5s) between files.

To run a slide show:

1. In Playback mode, press the MENU button.
2. Use the △/▽ button to select "▣" – Slide Show.
3. Press the ▷ button to display the available options.
4. Use the △/▽ button to select a delay option you require, then press the **OK** button.




All the files stored in the memory will be displayed, one after the other, after the OK button is pressed.

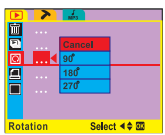
To stop the slide show, press any button on the DV camera at any time. The displayed playback file will remain on the LCD screen.

## Rotating Images

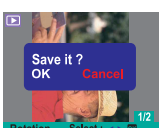
The **Rotate** function enables you to rotate captured images by 90°, 180°, and 270° when you play it back later for viewing. This function works only on captured still images.

To rotate an image:

1. In Playback mode, select a captured still image you want to rotate.
2. Press the MENU button.
3. Use the △/▽ button to select "⟲" – Rotate.
4. Press the ▷ button to display the available options.
5. Use the △/▽ button to select a rotation option you require, then press the OK button.



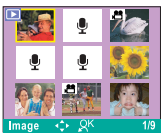

The rotated image is displayed on the screen, with a file-save confirmation screen after the OK button is pressed. Select OK, then press the OK button to save it.

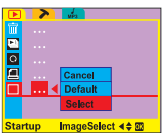


## *Specifying the Startup Image*

The **Startup Image** function allows you to specify which image will be displayed when you turn on the DV camera.

To specify a new startup image:




1. In Playback mode, select a captured still image you require.
2. Press the MENU button.
3. Use the ∆/∇ button to select "□" – Startup Image.
4. Press the ▷ button to display the available options.
5. Use the ∆/∇ button to choose "Select", then press the OK button.

   When "Select" is chosen, the captured still image you selected is set as the startup image when the "Busy" message vanishes from the LCD screen.

   The next time you turn on the DV camera, the selected image is displayed at startup automatically.

   Select the "Default" setting to restore the DV camera's startup image setting to factory default settings.

## *MP3 Playback*

The DV camera can also function as an MP3 player, allowing you to play downloaded MP3 music files, like a regular MP3 player. Before starting MP3 playback, make sure the MP3 music files are already in memory. Otherwise, transfer MP3 music files from your computer with a supplied USB cable.

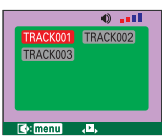
To access the MP3 player function:

1. In Playback mode, press the MENU button.
2. Use the ◁/▷ to select the Music menu ($_{MP3}^{\text{♪}}$).

   A music note icon appears on the screen.

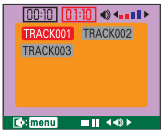
3. Press the OK button.

   A list of MP3 files stored on the DV camera appears.




4. Use the ◁/▷ button to select a music track to be played.
5. Press the △ (▶) button to start MP3 playback.
6. Press the MENU button to exit the menu.

During MP3 playback, do the following if required:




- Press △ (II) to pause MP3 playback.
- Press △ (▶) to continue MP3 playback.
- Press ◁/▷ (◀◀/▶▶) to increase or decrease the volume.
- Press ▽ (■) to stop MP3 playback.

## Deleting Files

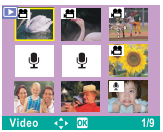
The **Erase** function lets you remove files from memory, allowing you to free up space in which to store future recordings.

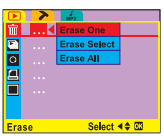
### Deleting Current

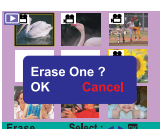
1. In Playback mode, select the file you want to remove from the memory, then press the MENU button.
2. Use the △/▽ button to select "🗑" – Erase, then press the ▷ button.
3. Choose "Erase One" in the Erase options menu, then press the OK button.

   A confirmation screen appears, allowing you to erase or to cancel.
4. Use the ◁/▷ button to select "OK", then press the OK button.

   The selected file or displayed file is permanently removed from memory and will no longer be available for playback.




### Deleting Selected

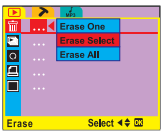
1. In Playback mode, press the MENU button.
2. Use the △/▽ button to select "🗑" – Erase, then press the ▷ button.
3. Choose "Erase Select", then press the OK button.

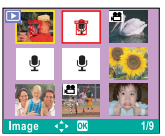
   A nine-image display appears.
4. Use the 4-way arrow button to select the unwanted file, then press the OK button.

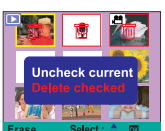
   A trash icon (🗑) appears and the selected file is enclosed in a red border, indicating that the selected recording is checked and can be deleted.
5. Use the 4-way arrow button to select more files to delete if desired.
6. Press the OK button once more.

   A confirmation screen appears, allowing you to delete the selected files or to cancel the checked file.
7. Use the ◁/▷ button to select "Delete checked", then press the OK button.

   The selected files are removed from memory and will no longer be available for playback.



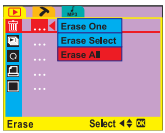



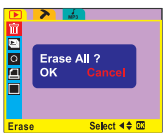
## *Deleting All*

1. In Playback mode, press the MENU button.
2. Use the △/▽ button to select "🗑" – Erase, then press the ▷ button.
3. Choose "Erase All", then press the OK button.

   A confirmation screen appears, allowing you to erase all or to cancel.
4. Use the ◁/▷ button to select "OK", then press the OK button.

   All files are removed from memory and will no longer be available for viewing.



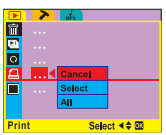

## *Printing Images*

The DV camera supports the DPOF (Digital Print Order Format) function that enables you to print still images stored in memory on a DPOF printer or for professional print services. You can print either an individual image or all your images. This function works only on captured still images.

To access the image print function:

1. In Playback mode, press the MENU button.
2. Use the △/▽ button to select "🖨" – Print.
3. Press the ▷ button.

   A Print options menu appears, allowing you to print all images, to print the selected images, or to cancel.



## *Printing Selected*

1. In the Print options menu, choose “Select”, then press the OK button.

   A nine-image display appears.

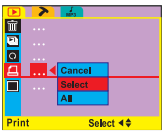
2. Use the ◁/▷ button to select the image you wish to print.

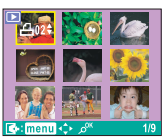
   The selected file is enclosed in a yellow border and comes with a confirmation screen of the number of copies to be printed.

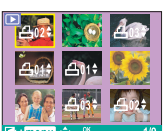
3. Use the △/▽ button to set the number of copies if desired.

4. Use the ◁/▷ button to select more files to print and to set the number of copies if required.

5. Press the MENU button twice to exit the playback menu.




## *Printing All*

1. In the Print options menu, choose “All”, then press the OK button.

   A confirmation screen appears.

2. Use the △/▽ button to set the number of copies, then press the OK button.

   All the stored images appear in a nine-image display, and each image is imprinted with a DPOF mark.

3. Press the MENU button twice to exit the playback menu.

# DV Camera Setup

The DV camera provides some manual settings that enable you to customize the functions of the DV camera for your specific needs. Use the Setup menu to set the various setting for your DV camera. The Setup menu can be accessed from any mode except Audio mode, and is always the same.

To access the Setup menu:

1. Press the MODE button to select , , or  mode.
2. Press the MENU button.
3. Use the ▷ arrow button to enter the Setup menu ().
4. Use the △/▽ button to navigate through the available functions for the DV camera.

Read this section carefully before making any changes. If you make a mistake and do not know how to correct it, you may have to reset all settings to the factory default.

### *Brightness*

Use this function to adjust the brightness level of the LCD screen. There are five levels of brightness to select from.

### *Beep*

When the Beep function is turned on, the DV camera will produce a beeping sound to indicate that some function has been carried out. The DV camera makes no beeping sound when this function is set to off.

### *Date*

Use this function to set the date for the DV camera. Configure the date setting using the △/▽ button.

### *Time*

Use this function to set the time for the DV camera. Configure the time settings using the △/▽ button.

### *Date Stamp*

Use this function to mark the date stamp on each image you take. The date stamp for a print is permanently shown in yellow on the right corner of the image.

### *Video Out*

Use this function to define the type of TV format on which the DV camera's images will be displayed. You can set the video output to either PAL or NTSC format. NTSC is used in North America and parts of Asia, while PAL is used in Europe. If you are unsure about your TV system, consult the documentation that came with it.

### *Format*

Use this function to prepare the SD card to record data. Formatting the SD card will erase all previous files that existed in the SD card. Make sure you have saved everything that you need on your computer before you format the SD card.

### *Reset*

Use this function to restore DV camera settings to factory default settings except for Date, Time, and Flash.

### *Copy to SD*

Use this function to enable you to copy all the files stored in internal memory to an external-memory SD card. You may need this function if you want to use the SD card in another device to download your files.

### *Frequency* HZ

Use this function to match the DV camera's frequency to that of the local AC power supply; select either 50 Hz or 60 Hz. If this function is not correctly set, the LCD screen may flicker when viewed in artificial light.

### *Power Saving*

Use this function to set the LCD screen to turn off automatically after one minute of inactivity, or the DV camera to power down when it is idle for totally two minutes. This will conserve battery power.

If the LCD screen turns off automatically, press any button to resume use.

If the DV camera turns off automatically, press the POWER button to turn on.

### *Language* ENG

Use this function to select the LCD screen display language. The available options are: English, Japanese, Simplified Chinese, Traditional Chinese, German, Spanish, French, Italian, and Korean.

### *USB Switch*

The DV camera can be connected to your PC to download files to your hard disk. It can also be used as a Web cam. Use this function to switch between standard USB mode and Web Cam mode.

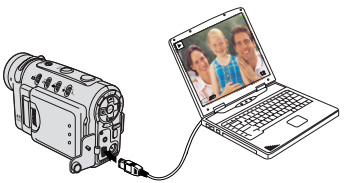
### *File No Reset* 001

Each file made with the DV camera is given a number. The file number is also the name of the file when you download it to your hard disk. Use this function to reset the file number to zero. Once you reset the file, the files you take will be saved in a new folder.

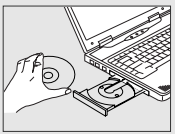
## Downloading to Your Computer

The Take-it MV320 DV camera is equipped with a USB connector that allows you to download stored files that were made with the DV camera to your computer using the USB link. You can play back these downloaded files with your computer system's default applications instead of on the DV camera.

The DV camera can also function as a mass storage device (MSD), allowing you to copy, delete, or transfer files back and forth between the computer and your DV camera, like a regular disk drive.



**NOTE**: If you use **Windows 98SE**, please follow the steps below to install the DV camera driver first:



1. Turn on your PC and insert the supplied Microtek CD-ROM in the CD-ROM drive.

   The Microtek Software Installer screen appears automatically.
2. Click "Camera Driver" when it appears on the screen, then follow the on-screen instructions to install.
3. Click "EXIT" on the Microtek Software Installer screen when the DV camera driver has been installed.
4. Restart your computer.

### System Requirements

- Color display with 24-bit color output capability
- CD-ROM drive (for installing software)
- 128MB RAM or more recommended

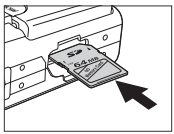
PC

- Windows 98SE/2000/Me/XP
- Pentium PC or higher with USB port

Mac

- Mac OS 9.x; Mac OS 10.1.3 or later
- Apple Macintosh series with built-in USB port

## Getting the DV Camera Ready



1. Make sure the SD card* containing the files you wish to download is inserted in the DV camera.
2. Make sure that the USB Switch function is switched to USB Mode (⇄).

   If the USB Switch is set to the incorrect mode, you will need to do the following:

   a. Press the MENU button to enter the Setup mode (↗).

   b. Select "⇄" – USB Switch, then select ⇄ —"USB Mode".

   c. Press the ◁ button, then the MENU button to exit the menu.

**NOTE:**

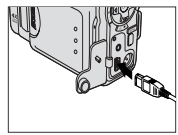
- With an SD card installed in your DV camera, the system reads both contents from the SD card and the DV camera's internal memory.
- Without an SD card installed in your DV camera, the system reads contents from the internal memory alone.
- The SD card may be placed into any card reader device. The files stored on the card can then be read from the card reader and copied to the computer.

* SD card is optional and is not included with your purchase.

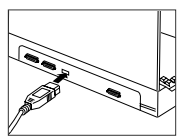
## Connecting the DV Camera

1. Make sure your computer is turned on.
2. Connect the DV camera to your computer, using the provided USB cable.

   - Connect the *narrow* end of the USB cable to the DV camera's USB connector.



   - Connect the *flat* end of the USB cable to the USB connector of your computer.

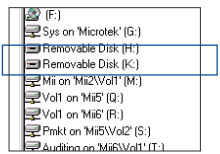


In a few moments, your computer will automatically detect the DV camera.

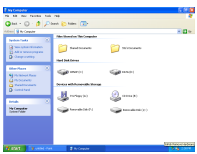
## *Copying Files*

After connection, the DV camera appears as two removable disks on the desktop, indicating the DV camera is connected to your computer successfully. Files can now be transferred into any folder on your hard drive.

1. **For PC Users**: Double-click the "My Computer" icon, then double-click "Removable Disk".

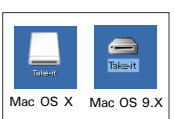



Windows 98SE/2000/Me

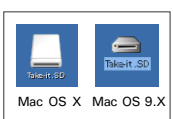


Windows XP

**For Mac Users**: Double-click the newly created icon (e.g., Take-it or Take-it.SD) on the desktop.



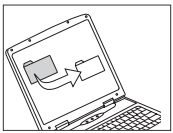

Without an SD card installed




With an SD card installed

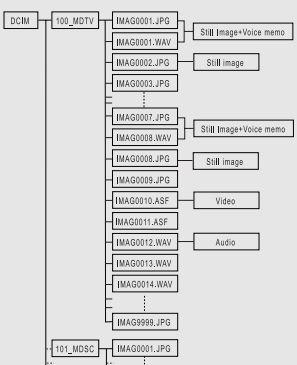
A folder (DCIM) appears, containing all the stored still images or video/audio clips that were made with the DV camera.

2. Double-click the "DCIM" icon, then double-click the "**100_MTDV**" folder to display the files.
3. Drag and drop the files into any folder on your computer.



**File Structure**

File names vary, depending upon the type of recording being described. The 100_MTDV folder containing the files are named IMAGxxxx.JPG for still images, IMAGxxxx.ASF for video clips, and IMAGxxxx.WAV for audio clips or voice memos.



## *Browsing Files*

Double-click a file in the folder that contains the files downloaded from the DV camera. The file opens with your system's default video, audio or image application.

**NOTE:**

- If you cannot play the transferred video files (e.g.*.ASF) with your system's default application, follow the procedures below.

  For Windows users: Install the bundled Ulead VideoStudio application contained in the Microtek CD-ROM.

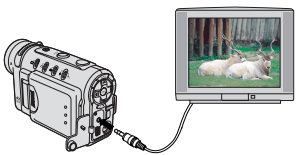
  For Macintosh users: Visit the "http://www.videolan.org/vlc" website to download the video player application.

## *Value-bundled Software*

The software bundled with the Take-it MV320 provides user-friendly tools for image editing and management, allowing you to open, view, print, email, upload to web or manage transferred images. For more details, refer to the CD-ROM accompanying your DV camera.

## Appendix A – Viewing on a Television Set

In addition to being viewed on the DV camera's LCD screen, recorded video clips or still images can be viewed on a TV screen. The TV screen can be used to frame the subject during video recording.



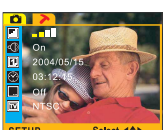
To view images on a TV set, select the video output system first.

### A. Selecting a Video Output System

1. Press the MENU button to enter the Setup mode ( ).
2. Use the 4-way arrow button to select " " – Video Out, then select "NTSC" or "PAL".

   **NTSC**: For USA, Canada, Mexico, Taiwan, Korea, Japan, etc.

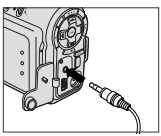
   **PAL**: For Europe, Australia, China, Singapore, etc.
3. Press the ◁ button, then the MENU button to exit the menu.



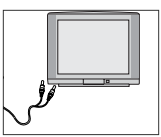
### B. Viewing the Image on a TV Set

1. Make sure that both TV set and DV camera are turned off.
2. Connect the DV camera to your TV set, using the provided Video cable.

   - Connect one end of the Video cable to the DV camera's TV-output connector.



   - Connect the other end of the cable to the Video-In jack of the TV set.



3. Turn on the TV set, and select the channel through the Video Input.
4. Power on the DV camera, then press the MODE button.

   To play back, press the ◁ button to enter Playback mode ( ).

   To use the TV screen to frame the subject during video shooting, press the ▽ button to enter Video mode ( ).

   The image will appear on the TV monitor.

## *Appendix B – Web Cam (Windows Only)*

A Web Cam is a digital camera attached to a computer that sends images or live video streams to a Web page and is ideal for video conferencing.

To use the DV camera as a Web Cam, you will need a computer, Web conference software (not provided by Microtek), and an Internet connection.

To set up the DV camera for use as a Web Cam, follow the steps outlined below.

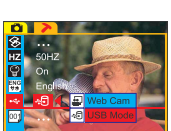
1. Install the "Camera Driver".
   a) Turn on your computer, and insert the supplied Microtek CD-ROM into the CD-ROM drive.

      **NOTE**: For Windows 98SE users: If the DV camera driver has been installed for viewing images on the computer, it is not required to reinstall the DV camera driver.

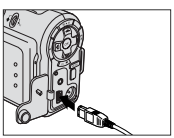
   b) When the Microtek Software Installer screen comes up, click "Camera Driver", then follow the on-screen instructions to install.

   c) Click "EXIT" on the Microtek Software Installer screen when the driver has been installed.

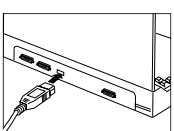
   d) Restart your computer.
2. Set the DV camera to Web Cam mode.
   a. Press the MENU button to enter the Setup mode ( ).




   b. Select "" – USB Switch, then select — "Web Cam".
   c. Press the ◁ button, then the MENU button to exit the menu.
3. Connect the DV camera to your computer, using the provided USB cable.
   - Connect one end of the USB cable to the DV camera's USB connector.



   - Connect the other end of the USB cable to the USB connector of your computer.



   In a few moments, your computer will automatically detect the DV camera.
4. Position your DV camera on the person or object to be broadcast.
5. Launch your Web camera software (e.g. Microsoft Net Meeting) and start the video conferencing function. If the software permits video recording, you can save the recorded video in a file for later use.
6. When finished, disconnect your DV camera from the computer.

## *Appendix C – Using the SD Card**

An SD card can be inserted in the DV camera to provide external memory in which to store images and video/audio clips. This section covers the following topics:

- Inserting the SD card
- Formatting the SD card
- SD card handling precautions

### *SD Card Insertion*

To insert the SD card, refer to section “Inserting the SD card" on page 10 of this manual. Ensure that the orientation of the SD card matches the SD card marking in the SD compartment.

**NOTE**:

- Incorrect insertion of the SD card will cause a memory error, blocking you from storing any data in the SD card.
- You may lose or damage data if you remove the SD card while it is in operation.
- SD cards that contain data created on a different system may cause DV camera malfunction.

*SD card is optional and is not included with your purchase.

### *SD Card Formatting*

Formatting allows you to prepare the SD card to record images and video/audio clips. Take note that this will remove the contents of the SD card to be formatted. Ensure that the data on the SD card is backed up or not needed before formatting the card.

**NOTE:** Formatting an SD card may solve most operation problems of the DV camera. It may also be necessary to format a card if it is used by a different DV camera.

### *SD Card Handling Precautions*

The following precautions are provided for you to safely get the best performance from your SD card.

- Abuse of the SD card may cause it fail in an operating situation. Do not attempt to disassemble, bend, shake, or apply force to the card. Do not subject the SD card to water, condensation, dust, sand, or high humidity and temperature, as well as to static electricity and noise.
- The SD card is equipped with a write-protected tab to prevent inadvertent recording over saved images. You cannot record when it is set to LOCK.
- You may lose or damage data if you remove the SD card while it is in operation.
- Store the card in its supplied case.
- Do not touch the card terminals or the card with any foreign material.

## *Appendix D – Maintenance*

Always follow the Safety Precautions that came with the DV camera.

- Use a soft cloth, tissue or lint-free cloth to clean the DV camera body.
- Use a lens brush to remove particulate matter from the lens, and then clean the lens with a soft eyeglass lens tissue or cloth.
- Do not use synthetic cleaning solutions or other solvents to clean the DV camera body or lens. If you are unable to remove marks or dirt from the lens, contact Microtek Customer Service.
- Do not rub the LCD screen forcefully or apply excessive pressure to it to avoid scratching the surface.
- Do not use water, detergents, paint thinner or benzene to clean any part of the DV camera, as this may damage the DV camera body or LCD screen.
- Use a lens brush, soft cloth, or eyeglass tissue/cloth to clean the LCD screen.

## Appendix E – Troubleshooting

### DV Camera Problems

**The DV camera does not power on.**

A1: The DV camera is not powered up.
- Press and hold the POWER button for a few moments to see if the READY LED is lit.

A2: The battery is inserted incorrectly.
- Insert the battery with the correct polarity as marked in the battery compartment.

A3: The battery has poor electrical contact with the terminals in the battery compartment.
- Clean the battery terminals with a dry cloth, reinsert them, and try to power on the DV camera again.

A4: Battery power is depleted.
- Recharge the battery if it is rechargeable, or replace the batteries with new ones.

A5: The incorrect type of battery is being used.
- Replace with four new AAA-sized alkaline batteries.
- Replace with a new Lithium ion battery (Nokia 8210 compatible).

A6: The battery/SD card door is open.
- Close the battery/SD door securely.

**The DV camera turns off suddenly.**

A1: Your DV camera has a two-minute time-out setting for saving battery consumption.
- You can disable the “Power Saving” feature in the Setup menu. Press any button to turn the LCD screen back on or the POWER button to turn the DV camera on.

A2: Battery power is depleted.
- Recharge the battery if it is rechargeable, or replace the battery with new ones.

| | |
|---|---|
| The DV camera does not record video clips, audio clips, or shoot still images. | A1: The Mode is set to the incorrect mode.<br>• Set the Mode to Photo mode (📷) to capture still images.<br>• Set the Mode to Video/Audio mode (🎥/🎙) to record video/audio clips.<br>A2: There is no available memory left on the SD card.<br>• Download files to your computer and removes existing files from the SD card. This will give you more available memory space.<br>• Replace with a new SD card.<br>A3: The SD card is write-protected.<br>• Set the write-protected tab on the SD card to the unlocked position.<br>A4: The SD card is corrupted or not formatted correctly.<br>• Reformat the SD card.<br>• The SD card may be damaged; contact your dealer. |
| The subject is not in the LCD screen. | A1: The Mode is set to the incorrect mode.<br>• Set the Mode to Photo mode (📷) or Video/Audio mode (🎥/🎙).<br>A2: The LCD screen is manually switched off.<br>• Press any button to turn it on. |
| The date stamp could not be found on the captured image. | A: The “Date Stamp” setting is disabled.<br>• Enter the Setup mode and enable the “Date Stamp” function. |
| The time/date stamp on the images or video/audio clips is incorrect. | A: The date and time are incorrectly set.<br>• Enter the Setup mode, then set the correct date and time. |

### *Battery Problems*

The battery power is depleted prematurely.

A1: The incorrect type of battery is being used.
- Replace the batteries with a rechargeable Lithium ion or four AAA-sized alkaline batteries.

A2: The temperature of the batteries is lower than that of standard operating conditions. Battery performance deteriorates in a cold environment.
- If the ambient temperature is low, store the batteries in a warm place (e.g., your pouch) before use.

A3: The rechargeable battery has not been used in over a year.
- To obtain optimal performance, recharge the battery several times.

A4: The service life of the rechargeable battery may have been reached.
- Stop using the rechargeable battery and replace it with a new one that follows the same specifications.

Rechargeable battery cannot be successfully charged.

A: The rechargeable battery has reached its service life.
- Replace with a new rechargeable battery.

### *Photography Problems*

Shots are out of focus and blurry, or photograph quality is not as good as expected.

A1: The DV camera was moved while a shot was being taken.
- Hold the DV camera firmly when shooting, or use a tripod if necessary.

A2: The subject is not within the DV camera's acceptable focus range.
- For normal shooting, make sure that the subject is at least 3.28 ft. (1 m) away from the lens of the DV camera.

Photographed subject is too dark or underexposed.

A1: There is not enough ambient light.
- Turn the flash on.

A2: Your subject is backlit (i.e., light comes from the back of the subject).
- To improve, choose a positive EV value.

A3: The White Balance (WB) setting is incorrect.
- Adjust the White Balance setting.

Photographed subject is too bright or overexposed.

A1: The subject is under strong light.
- To improve, choose a negative EV value.

A2: The light source shines directly into the lens of the DV camera.
- Change the angle of the DV camera, or move the DV camera away from the light source.

A3: The flash fires in every shot taken.
- Do not set the flash mode to "Forced flash" or "Forced flash with Red-eye reduction".

| | |
|---|---|
| The flash does not fire. | A1: Flash function is disabled when shooting video clips.<br>A2: The flash mode is set to Flash off.<br>• Select any flash mode except “Flash off”. |
| Images or video/audio clips cannot be played back. | A1: The Mode is set to the incorrect mode.<br>• Set the Mode to Playback mode (▶). |
| The DV camera cannot delete images or video/audio clips. | A: The SD card is write-protected.<br>• Set the write-protected tab on the SD card to the unlocked position. |
| Images or video/audio clips cannot be played back on TV. | A1: The Mode is set to the incorrect mode.<br>• Set the Mode to Playback mode (▶).<br>A2: The “Video Out” setting is set to the incorrect system.<br>• Enter the Setup mode, set Video Out to “NTSC” or “PAL” depending on your video output system.<br>A3: The DV camera is disconnected from the TV set.<br>• Make sure the video cable is properly connected to both the DV camera and the TV set. |

### *Computer Problems*

**The transferred files cannot be viewed on a computer.**

A1: The "USB Switch" setting is set to the incorrect mode.
- Enter the Setup mode, and set USB Switch to "USB Mode".

A2: The DV camera is disconnected from the computer.
- Reconnect the USB cable.

A3: The files in the DV camera have not been transferred to the computer.
- With the USB cable properly connected to both ends, drag and drop the files to your computer.

**The transferred video file (e.g., *.ASF) cannot be played with your system's default application.**

A: The video player application is not installed.
- For Windows users: Install the bundled Ulead VideoStudio application contained in the Microtek CD-ROM.

  For Macintosh users: Visit the "http://www.videolan.org/vlc" website to download the video player application.

**The transferred video file (e.g., AVI) cannot be played back in Windows 98SE/2000/ME.**

A: The DirectX driver is not installed.
- Install the DirectX driver appropriate for your system from the Microtek CD-ROM; version 8.1 or later is recommended. DirectX is automatically installed each time when you install Ulead VideoStudio.

**Windows cannot find the Removable Disk drive.**

A1: The "USB Switch" setting is set to the incorrect mode.
- Enter the Setup mode, and set USB Switch to "USB Mode".

A2: The DV camera is disconnected from the computer.
- Make sure one end of the USB cable is connected to your computer and the other end to your DV camera's USB connector, then turn on the DV camera.

- **For Windows 98SE**, check to see if "Camera Driver" has been installed on your computer.

  Go to the Windows Control Panel and double-click "Add/Remove Programs". If the DV camera driver does not appear in the list, you must install the DV camera driver from the Microtek CD-ROM.
- Check if the DV camera is detected by your system.
  1) Right-click the "My Computer" icon and click Properties. The "System Properties" window appears.
  2) Click the "Hardware" tab and then click the "Device Manager" button. Expand the "Disk drives" tree; the removable disk drive should be in the list.

Mac OS cannot find the newly created drive icon (Take-it, Take-it.SD) on the desktop.

A1: The "USB Switch" setting is set to the incorrect mode.
- Enter the Setup mode, and set USB Switch to "USB Mode".

A2: The DV camera is disconnected to the computer.
- Make sure one end of the USB cable is connected to your computer and the other end to your DV camera's USB connector.
- Make sure the USB cable is properly connected to both the DV camera and the computer.

The DV camera does not operate in Web Cam mode.

A1: The "USB Switch" setting is set to the incorrect mode.
- Enter the Setup mode, set USB Switch to "Web Cam".

A2: The DV camera is disconnected from the computer.
For Windows Users:
- Make sure one end of the USB cable is connected to your computer and the other end to your DV camera's USB connector, then turn on the DV camera.
- Check to see if "Camera Driver" has been installed on your computer.

Go to the Windows Control Panel and double-click “Add/Remove Programs”. If the DV camera driver (for Web Cam) does not appear in the list, you must install the DV camera driver from the Microtek CD-ROM.

- Check if the DV camera is detected by your system.
  1) Right-click the “My Computer” icon and click Properties. The “System Properties” window appears.
  2) Click the “Hardware” tab and then click the “Device Manager” button. Expand the “Image Device” tree; the DV camera should be in the list.

For Macintosh Users:

- Make sure one end of the USB cable is connected to your computer and the other end to your DV camera’s USB connector, then turn on the DV camera.
- Check to see if “Camera Driver” has been installed on your computer.
- For Mac OS 9.x,
  1) Go to the Apple menu and select “Apple System Profiler”. The “Apple System Profiler” window appears.
  2) Click the “Devices and Volumes” tab; the DV camera related drivers should be in the “USB” tree.

## *Appendix F – Warning and Error Messages*

The table below lists warnings and error messages associated with operating the DV camera. Follow the recommended solutions to resolve errors.

| Warning and Error Messages | Problem | Solution |
|---|---|---|
| Battery low! | Battery power is depleted; DV camera will shut down soon. | Turn the DV camera off; replace or recharge batteries |
| Card error! | • Incorrectly formatted SD card<br>• The SD card contact area is smudged or soiled<br>• The SD card is damaged<br>• DV camera is faulty | • Reformat or replace the SD card<br>• Use cotton swab dipped with industrial alcohol to clean the contacts<br>• Replace the SD card<br>• Contact Microtek Customer Service |
| Memory full! | The memory space is full recorded | Erase some data or use an SD card that has ample free space |
| Card protected! | • The SD card is write-protected | Set the write-protected tab on the SD card to the unlocked position |

# Appendix G - Menu Items and Factory Defaults

| Video/Photo Menu | Options | Description |
|---|---|---|
| Video Format | MJ, MJ | Selects the file format for video clips |
| Size | 7M, 3M*, 2M, 1M, VGA / 5M*, 6M | Selects the pixel recording size for images |
| Quality | , *, | Adjusts the compression rate for images |
| Drive Mode** | , *, | Toggles among Self-timer, Single shot, and Continuous shot modes |
| EV Compensation | -2.0, -1.5, -1.0, -0.5, 0.0*, +0.5, +1.0, +1.5, +2.0 | Compensates for extreme differences between background and foreground lighting |
| White Balance | A*, , , , | Adjusts the White Balance according to light conditions for recording |
| Sharpness** | –, *, + | Adjusts the image outline for images |
| Voice Memo** | On, Off* | Records a voice memo for a captured image |
| Color Mode | *, , | Toggles among Normal, Black & White, and Classic color modes |
| **Playback Menu** | **Options** | **Description** |
| Erase | Erase One, Erase Select, Erase All | Erases recorded images and video/audio clips |
| Slide Show | Cancel, 2S, 5S | Plays back stored files in a continuous slide show |
| Rotate | Cancel, 90°, 180°, 270° | Rotates pictures up to 270 degrees |
| Print | Cancel, Select, All | Adds a DPOF print mark on the recording for professional print services to determine which prints are to be printed at a photofinisher |
| Startup Image | Default, Cancel, Select | Specifies the startup image for the DV camera |
| **Setup Menu** | **Options** | **Description** |
| Brightness | , , , , | Adjusts the brightness level of the LCD screen |
| Beep | On*, Off | Toggles DV camera's beep sounds on and off |
| Date | yyyy/mm/dd | Sets the date for the DV camera |
| Time | 00:00:00 (hr/min/sec) | Sets the time for the DV camera |
| Date Stamp | On, Off* | Stamps the time on captured images |
| Video Out | NTSC*, PAL | Selects your video output system |
| Format | Cancel, OK | Formats the SD card |
| Reset | Cancel, OK | Resets the function settings to their default configurations |
| Copy to SD | Cancel, OK | Copies the data stored in internal memory to the SD card |
| Frequency | 50HZ, 60HZ* | Sets the power frequency to accommodate local AC power |
| Power Saving | On*, Off | Sets the DV camera to power off after two minutes of inactivity |
| Language | English*, Japanese, Korean, Simplified Chinese, Traditional Chinese, German, French, Italian, Spanish | Sets the LCD screen display language |
| USB Switch | Web Cam, USB Mode* | Toggles between standard USB Mode and Web Cam modes |
| File No Reset | Cancel, OK | Resets the file number to zero |

* Default setting
** For Photo menu only

# Appendix H – Specifications

| | |
|---|---|
| Image Sensor | 3.21 megapixels CMOS |
| Sensor Size | 1/2" |
| Resolution | |
| Video clips | 640x480 pixels (ASF:12 fps; AVI: 30 fps)<br>320x240 pixels (30 fps) |
| Still image | 3072x2304 (7 megapixels, interpolated),<br>2048x1536, 1600x1200, 1280x960,<br>640x480 pixels |
| File Formats | • Video clips: ASF (MPEG 4), AVI<br>• Still images: JPEG (Exif 2.2)<br>• Audio clips: WAV |
| Image Ratio (w:h) | 4 : 3 |
| Lens Aperture | F 3.0 |
| Focal Length | f = 8.3 mm |
| Digital Zoom | 4X |
| Playback Zoom | 4X |
| Focus Range | • Normal: 3.28 ft. (1 m) to infinity<br>• Macro: 0.5 - 0.8 ft. (15 - 25 cm) |
| LCD screen | 2.0" LTPS LCD (153,600 pixels)<br>(270° rotation) |
| White Balance | Auto, Daylight, Cloudy, Tungsten,<br>Fluorescent |
| Exposure | |
| Exposure Adjustment | -2.0 EV to +2.0 EV in 1/2 step |
| Exposure Metering | Full-zone Average |
| Shutter Speed | 1/20 – 1/4000 sec. |
| Sensitivity Equivalent | ISO 100 |
| Flash | |
| Built-in Flash | Fixed |
| Flash Modes | Auto, Auto with Red-eye reduction,<br>Forced flash, Forced flash with Red-<br>eye reduction, Flash off |
| Self-timer | 10 sec. delay |
| Audio Clip | Unlimited length (maximum length<br>dependent on SD card) |
| Print Format | DPOF (Digital Print Order Format) |
| Quality Levels | Best, Fine, Normal |
| Storage Media (External) | SD (Secure Digital) card support |
| Storage Included | 16 MB internal flash memory |
| Driver | USB mass storage device driver |
| I/O Terminals (Connectivity) | USB 1.1, AV output (Video Out) |
| Video Output | NTSC, PAL |
| Power Saving | 2 min. |
| Power Source* | Four AAA-sized alkaline batteries,<br>or rechargeable Lithium ion battery<br>(Nokia 8210 compatible) with<br>Adapter (5V, 2A)<br>* Power accessories depend on the<br>configuration of the DV camera<br>purchased |
| Weight | Approx. 5.8 oz. (170 g) |
| Dimensions | 4.4" x 2.6" x 2.0"<br>(112 x 67 x 50 mm) |
| Tripod Mount | Yes |
| Microphone | Yes |
| Speaker | Yes |
| Environment | |
| Operating Temperature: | 32° to 104° F (0° to 40° C) |
| Relative Humidity: | 0 to 85% |
| Storage Temperature: | 14° to 140° F (-10° to 60° C) |